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WRITTEN TESTIMONY

1. Pecan History
2. Federal Crop Insurance
3. Tree Assistance Program
4. Pecan Research
5. Disaster Limit
6. Country of Origin
7. Conservation Practices (Attachment)

PECAN HISTORY

I'm going to share with you a little history about Pecans and what this crop should mean to the people in the United States. Pecans grow in 20 states. In the main valley of the Mississippi, the pecan is native as far north as Davenport, Iowa; in the valley of the Ohio as far north as Covington, Ky., and in the valley of the Wabash as far north as Terre Haute, Indiana. In Henderson County, KY. at the mouth of Green River, on the banks of the Ohio there are 300-400 acres of solid stand Wild Pecans. A number of these trees are sixteen feet in circumference and over 150 feet high.

Most of our improved varieties are grown along the Gulf Coast from Texas to South Carolina. Georgia has the most production followed by Texas. PECANS ARE THE ONLY MAJOR CROP THAT IS NATIVE TO THE UNITED STATES. All other major crops were imported to America from other countries. For American Indian tribes in the south central region of the United States, especially in the Mississippi Valley, the pecan served as a dietary staple long before the arrival of Europeans. Later they traded pecans to the settlers for furs, trinkets, and tobacco. Before the early sixteenth century, no European had ever seen a pecan nut.

George Washington was fond of pecans and frequently carried them in his pockets. In 1774 he planted several young pecan seedlings at Mount Vernon. Thomas Jefferson started growing pecan trees at Monticello in 1779.

An important historical event took place in the pecan industry in 1847; Antoine, a slave on Oak Alley Plantation in southern Louisiana, succeeded in top working sixteen native pecan trees – A technique which involved cutting back numerous pecan seedlings and grafting scions of a selected parent tree on the young sprouts. This discovery was a significant milestone in asexual propagation of the pecan: Antoine's selection was given the name CENTENNIAL in 1876 in commemoration of the hundredth anniversary of the United States, and over the years became a popular variety. Since 1848, more than 500 other pecan cultivators have been named.

Union soldiers returning north in 1865 after the civil war brought pecans with them and helped to increase the nut's popularity. During the early nineteenth century, appreciable progress toward increasing production was made by top working native pecan seedlings with new, standard varieties. It took about four centuries for the pecan to become an important crop in the United States; it reached a commercial scale in 1920 and has increased steadily ever since.

Most edible tree nuts are essentially one state crops; Almonds, Pistachios, and Walnuts are produced in California; Filbert in Oregon and Macadamia nuts in Hawaii. The pecan on the other hand, is a multi-state crop, stretching across the country from the Southeast to the Southwest throughout some twenty states.

Pecans are one of our National Treasures. Over 40% of both houses of Congress, regardless of party affiliation, have pecans growing in their state. I want you to understand the importance of pecans to our nation.

FEDERAL CROP INSURANCE

I chaired the committee, that began in 1980, to get Congress to pass a bill that would enable the RMA to provide federal crop insurance for our pecan growers. Not until 1998 did RMA allow us to have three pilot counties (Dougherty, Lee, and Mitchell) in Georgia. In 2003, we were able to add seventy-nine additional counties in Georgia and in 2004 added two additional counties in Alabama (Baldwin & Mobile). Only in 2005 was a national program approved. Twenty-five years after we started.

It was the sense of Congress on the expansion of crop insurance that enabled us to move forward in the last four years. There are some small changes but important provisions that need to be made to the current policy to bring it in line with other crops. Crops such as Peaches, Peanuts, Cotton, Corn, etc. have a provision that in the event of a crop failure insurance coverage cannot be adjusted down more than 10% of the individual farms APH (yield average) this is referred to by RMA as a 10% percent cup. Long range weather forecasters predict that the gulf coast region weather patterns will continue for the next fifteen to twenty years. If this is true, our crop insurance would be worthless in a few years without this 10% cup.

RMA has a restriction that penalizes the grower from thinning his trees more than 12.5%. This reduction coverage lasts for a period of two years. This is completely contrary to all recommendations by the extension service and the USDA on following good cultural practices. We have provided data from all over the southeast by pecan specialists and they simply refuse to accept this data and make this significant change.

We have no provision in this policy to cover loss of trees. It is our contention that a simple rider could be attached to our present policy that would provide coverage for tree loss in the event of a disaster. This could be offered to the grower as an option with something like a 5% increase in his premium.

TREE ASSISTANCE PROGRAM

The 2002 farm bill provided a tree assistance program to replant trees in the event of a national disaster. The criteria that a grower must have a minimum 15% tree loss limited the amount of grower participation and basically made it ineffective to most all Georgia growers. Our Georgia growers lost thousands of trees during the hurricanes of 2004 and we only had two growers in the entire state to qualify because of this 15% limitation. We feel that, that was not the intent of Congress and the 15% should be removed.

PECAN RESEARCH

We need annual federal funding for our Byron Fruit and Nut Laboratory in Byron, Georgia. It is the only USDA research station that provides research on pecans nationwide. In addition to this research funding we need a one time expense of \$3 million

to repair, upgrade the buildings, and needed replacement of equipment. Most states that grow pecans have either stopped or drastically cut their spending on pecan research and the Byron station is basically all that we have to sustain continued research for our pecan growers.

DISASTER LIMITS

We feel that the \$80,000 limitation on disaster should be removed from pecans. Normally disasters on pecans occur from hurricanes in the late fall that normally striking our crops thirty to forty-five days prior to harvest. Pecans are a very expensive crop to grow, with most growers spending in excess of \$800 per acre. When I see items like \$10 million in the 2002 farm bill for Orange County, NY for farmers that suffer losses to onions from 1996 to 2000 crop year and \$94 million to apple producers for loss of market during the 2000 crop year with a statement that says "the secretary shall not establish a payment limitation, or income eligibility limitations.", I wonder why our pecan growers do not deserve the same consideration when they have lost thousands of dollars due to a national disaster.

COUNTRY OF ORIGIN

The 2002 farm bill provided time limits on country of origin labeling on crops such as pecans and at this point in time no action has been taken to enforce this provision. We the Georgia Pecan Growers Association fully support country of origin labeling and we certainly hope that Congress will take the necessary steps to enact the law that they have already passed. You will find listed below pounds of pecans shelled and In shell imported into the United States in 2004 and 2005. Most of these countries do not have the

rigid restrictions of our EPA to control chemicals being used on these commodities and we feel that labeling so that the consumers should know and have the opportunity to select the pecan nuts that they want to use for their families consumption is most important..

Pecans Shelled

	2004	2005
Australia	178,573 lbs.	493,830 lbs.
Mexico	8,842,651 lbs.	9,299,003 lbs.
Peru	4,409 lbs.	127,867 lbs.
Rep. South Africa	<u>143,299 lbs.</u>	<u>974,433 lbs.</u>
Total	9,168,932 lbs.	10,895,133 lbs.

Pecans In Shell

	2004	2005
Mexico	34,515,218 lbs.	22,535,421 lbs.
Peru	<u>35,274 lbs.</u>	<u>37,478 lbs.</u>
Total	34,550,492 lbs.	22,572,899 lbs.

CONSERVATION PRACTICES

(SEE ATTACHMENT INCLUDED)

In the 2002 Farm Bill listed under "Conservation Security Program" the planting of clover and other legumes in pecans as we understand and try to interpret "Sec. 1238A" of the Farm Bill

No. 4 Conservation Practices

- (A) Nutrient Management
- (B) Integrated Pest Management
- (E) Soil Conservation
- (G) Wildlife Habitat & Food Supply

All of the above meets the standards listed in the 2002 Farm Bill as it is understood. The only problem that exists is that FSA will never except pecans unless Congress spells it out in the 2007 Farm Bill.

It was a pleasure for me to appear before you today and I hope that members of congress will be sensitive to the needs of our pecan growers and I say again that we are farmers of one of our NATIONAL TREASURES (pecans).

Hilton R. Segler

Benefits & Use of Crimson Clover and Legumes in Pecan Orchards

Lenny Wells, UGA Extension Horticulture-Pecans

A mature pecan orchard consists of two separate, yet interrelated ecosystems. The orchard floor provides a working surface for orchard operations and influences activities in the trees, which produce the crop. Pecan orchards usually consist of sod culture on the orchard floor with a weed-free herbicide strip approximately 6-12" wide along the tree row. Row middles are maintained by mowing. The mowed sod middle improves wet weather passage for spraying, harvesting, and other orchard operations.

An efficient orchard floor cover does not compete heavily with trees for moisture and nutrients and is compatible with orchard insect populations. Weed competition with tree roots is significant throughout the life of the tree. In a newly planted orchard, weed competition can significantly reduce young tree survival and can stunt tree growth. Weed competition can reduce tree growth and yield, as well as promote alternate bearing in mature trees.

Pecan trees have an extensive root system, consisting of a tap root which can penetrate as deep as the soil structure and water table permit, and small feeder roots located near the soil surface. These feeder roots supply the bulk of the pecan's nutritional needs and come into direct competition with vegetation on the orchard floor.

Cool season legumes, such as crimson clover, possess a variety of characteristics that make them compatible with pecan production. Cool season legumes are not especially competitive with trees for soil moisture until mid to late spring. They also serve as an effective source of organically bound nitrogen (N). In addition, cool season legumes stimulate an early increase in beneficial insect populations. The environmental benefits of cool season legumes make their use an especially attractive practice. In addition to the benefits mentioned above, legumes can reduce weed competition, aid in the cycling of nutrients, build soil, organic matter, prevent soil erosion and runoff, and serve as an effective source of food and habitat for a variety of wildlife species.

Pecan Nitrogen Use & Compatibility with Crimson Clover

Of all nutrients applied to pecans, N most commonly limits pecan growth and orchard profitability. This element has a dominant influence on vegetative growth and crop production. In recent years, the rising cost of fuel, and its effect upon synthetic fertilizer production, has led to a need for alternative sources of nitrogen in many orchard and row crops operations. With regard to pecan production, one very efficient source can be found in the planting of leguminous plants, particularly crimson clover, on the orchard floor.

All legumes, including crimson clover, utilize soil-dwelling bacteria that convert nitrogen from the air into a form that can be used by plants. This is termed "nitrogen fixation". Only particular strains of bacteria provide optimum N production for each group of legumes. When the roots of a leguminous plant come into contact with the appropriate bacteria, the root hairs encircle the bacteria to create a nodule which houses

the bacteria. These lumps on the root surface may range in size from a BB to a kernel of corn.

Perennial legumes "fix" N during any time of active growth, usually peaking at flowering. With seed formation, N fixation ceases and the nodules slough from the roots. While they are alive, legumes release little to no nitrogen from the soil. As they die and are decomposed by soil micro-organisms, the N in the roots, stalks, leaves, and seeds are converted to a form available to other plants. Residue from a grass/legume mix has a higher C:N ratio than the legume alone, thus the release of N is slow and not as vulnerable to loss.

Mature pecan trees require 75-150 lbs of N annually for optimum production. Nitrogen uptake in the tree is driven by demand. There are two critical periods of nitrogen demand during the season; (1) early foliage growth and (2) kernel filling. The early spring foliage flush is nourished primarily from reserves held within the tree, while the nitrogen demand during the kernel fill stage is usually satisfied from soil uptake. If N is limited at kernel filling, then the tree will mobilize N from the foliage to the kernels.

Studies have suggested that crimson clover over-winters dependably in the southeastern United States and much of the U.S. pecan belt. A vigorous stand of crimson amount for pecans. When aided by moisture and warm weather to speed up decomposition, up to half the N available from legumes can be released within 7 to 8 weeks.

Pecans are an "irregular bearing" crop, meaning that they tend to bear heavy crop loads for 1-2 years, followed by very light crop loads, depending upon various physiological and environmental factors. In the light crop or "off" years, the N supplied by the clover alone, would be adequate for optimum production. Heavy crop or "on" years may require low supplemental N rates in order to bring marketable nuts to maturity and provide a return crop the following year.

Enhancement of Pest Management

Conserving and encouraging beneficial organisms is key to achieving sustainable pest management. The deep red blossoms of the crimson clover attract various species of bees, which feed readily on the abundant nectar. In addition, blooms may harbor beneficial insects such as the minute pirate bug, Pea aphids, and blue alfalfa aphids are commonly associated with crimson clover. Although these species are not pests of pecan, they serve as alternative food sources for beneficial predators such as lady beetles, green lacewings, soldier beetles, predaceous stink bugs, damsel bugs, and hover flies. As the clover declines with the onset of warm weather in June, these beneficial insects move into the trees to feed on pecan aphids and other insect pests, reducing the need for insecticide application.

In addition to reducing insecticide inputs through enhancing beneficial insect populations, the use of legumes in the orchard can also reduce herbicide use. As crimson clover grows, it forms a thick, living mulch. This helps to smother and shade out more troublesome, competitive weed species.

Soil Building & Sustainability

Clover can improve orchard soils in a number of ways. Protection against erosion is the most obvious benefit, but providing organic matter is an equally important and more long term goal. Clover can provide habitat and/or food source for important soil organisms, break up compacted soil layers, and help dry out wet soils.

Erosion deprives orchards of topsoil, the most fertile portion of soil with the highest amount of organic matter. When soil particles are dislodged by rainfall, they are more vulnerable to runoff. Cool season legumes can reduce the impact of rainfall on bare ground, slow the action of moving water, increase the soil's ability to absorb and hold water, and help stabilize soil particles. Crimson clover produces more dry matter (5600-6000 lbs/A) than many other legumes and is recommended for soil erosion control because of its high early autumn dry matter production. Grass/crimson clover mixtures combine fibrous surface roots with long tap roots and have been observed to reduce herbicide runoff by 94-100%.

Over-fertilization is common in orchard crops because most growers rely on synthetic fertilizers. The amount of nitrogen removed by the crop in proportion to that applied is often far less with tree crops than with more traditional crops. Therefore, the leaching of nitrates into groundwater may be especially serious in orchard crops. Winter cover crops such as crimson clover grow primarily during a period of tree dormancy, when N uptake by the crop is at a minimum and percolation from rainfall is often the greatest. Although pecan growers have historically had little economic incentive to grow cool season legumes solely to prevent nitrate leaching, it is one of the many benefits they provide.

Perennial legumes such as crimson clover break down quickly; however their root systems remain tough and fibrous, contributing to the accumulation of organic matter. The addition of organic matter to soils improves soil structure, increases water holding capacity, increases cation exchange capacity (the ability of the soil to act as a short term storage bank for positively charged plant nutrients), and provides more efficient storage of nutrients.

Legumes help to increase the total number and diversity of soil organisms, which is the key to a healthy, well functioning soil. Legumes are closely associated with beneficial fungi, called mycorrhizae, which produces a water-insoluble protein known as glomalin, which binds and glues together particles of organic matter, plant cells, bacteria, and other fungi.

Well aggregated soils are less prone to compaction. Mycorrhizal fungi also have an efficient method of absorbing phosphorous (P) from the soil, which they pass on to their host. Without this relationship, P builds up in the soil. Although it is not leached, it can runoff into streams and rivers through soil erosion. The filaments of the mycorrhizal fungi effectively extend the root system and help the plants tap more P from the soil. Keeping P in an organic form is the most efficient way to keep it cycling in the soil.

Wildlife Benefits

Due to the limited availability of suitable nesting areas in the United States for early-successional songbirds, converting a common attribute of the southern agricultural landscape, such as pecan orchards, to a resource for food and reproductive habitat would provide some of the factors necessary to increase survival and nesting success. Increased abundance of birds and beneficial arthropods and higher species richness in agricultural fields have been linked to habitat heterogeneity.

The sod/clover orchard floor mixture along with the pecan overstory allows for an increased landscape heterogeneity. Birds benefit from an increase in prey, an increase in cover for nesting sites and fledglings, and a reduction in nest loss due to the elimination of mowing during the nesting season. In addition to enhancing the landscape for non-game songbirds, as well as bobwhite quail, wild turkey, and mourning dove, cool-season legumes provide high quality forage for whitetail deer during the late winter when other food sources have dwindled.

Clover has been shown to be highly effective at attracting high avian and arthropod densities, increasing wildlife and agronomic benefits compared with conventional management of agricultural systems. The reduction of input in the clover system, coupled with its agricultural systems. The reduction of input in the clover system, coupled with its agricultural and environmental benefits, makes this system both a good choice for reducing negative impacts on wildlife and surrounding ecosystems and an economically desirable one.

Establishment & Maintenance

In order to establish an adequate stand, Crimson clover should be drilled at 15-18 lbs/A or broadcast at 20-30lbs/A. Establishment should be completed as soon as possible following pecan harvest, preferably in November-December. If clover is seeded prior to harvest, many seeds are removed from the orchard floor with the sweeping and harvesting process. Since legumes require the presence of rhizobial bacteria to effectively fix N, it is important to obtain the correct rhizobial inoculants for the legume being grown. Fresh inoculants and a sticking agent should be mixed with the seed. Otherwise, there will be few nodules and N fixation will be low. Soil pH should be maintained at 6.5 because *Rhizobia* bacteria cannot function properly under highly acidic conditions and will die in soils with pH below 5.0.

Many southeastern orchards have well established populations of annual ryegrass. Where this occurs, the ryegrass often competes with and inhibits growth of clover. This can be prevented by the application of a low rate (16oz/A) of sethoxydim herbicide in February. The rye grass does not have to be eliminated, only stunted by this application in order to release clover from this competition.

By foregoing mowing of the orchard until clover has gone to seed, producers can take advantage of crimson clover's excellent natural re-seeding sooner than loamy or clay soils, therefore soil type should be taken into consideration when estimating the need for re-establishment.

Cost & Savings

The appropriate cost of clover seed and bacterial inoculums required to produce N-fixing nodules is \$40/A. At 2005 N prices of \$72/A, this represents a difference of \$32/A. Clover can replace from 50-100% of synthetic N applied to pecan orchards, depending on the pecan crop load in a given year. This would save growers approximately \$36-\$72/A and significantly reduce the grower's reliance on synthetic N. Reduced maintenance and mowing compared to grass covers creates further economic savings and reduces fuel consumption.

Pecans acreage is widely dispersed and hard to track, but reliable estimates indicate that pecans are grown on approximately 550,000 acres in the United States, with Georgia making up about ¼ of the total U.S. acreage. This would indicate a potential savings of approximately \$19,800,000-\$39,600,000 in N costs, as well as a 41,250 ton reduction in the use of synthetic N nationwide with the use of N-fixing legume culture applied to orchard floor management.

Summary

One of farming's greatest challenges is to keep N in a stable, storable form until needed by the crop. The use of organic N, such as that produced by legumes, is an ideal way to accomplish this. Combining warm season sod culture and cool season legumes is a practical and effective strategy for conserving and supplying nitrogen for orchard crops, as well as enhancing stewardship of the environment through the enhancement of beneficial insects, weed suppression, soil sustainability, and wildlife.

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**Committee on Agriculture
U.S. House of Representatives
Information Required From Non-governmental Witnesses**

House rules require non-governmental witnesses to provide their resume or biographical sketch prior to testifying. If you do not have a resume or biographical sketch available, please complete this form.

1. Name: Hilton R. Segler
2. Business Address: 2316 Bristol Rd.
Albany, Georgia 31721
3. Business Phone Number: 229-881-4082
4. Organization you represent: Georgia Pecan Growers Association
5. Please list any occupational, employment, or work-related experience you have which add to your qualification to provide testimony before the Committee:
Pecan Grower - 35 years
Pecan Consultant - DuPont
Pecan Consultant on 5000 acres for growers
6. Please list any special training, education, or professional experience you have which add to your qualifications to provide testimony before the Committee:
50 years working in agriculture, fertilizer,
chemicals, and farming
7. If you are appearing on behalf of an organization, please list the capacity in which you are representing that organization, including any offices or elected positions you hold:
Georgia Pecan Growers Association V.P.

PLEASE ATTACH THIS FORM OR YOUR BIOGRAPHY TO EACH COPY OF TESTIMONY.

Committee on Agriculture
U.S. House of Representatives
Required Witness Disclosure Form

House Rules* require nongovernmental witnesses to disclose the amount and source of Federal grants received since October 1, 2004.

Name: Hilton R. Segler

Address: 2316 Bristol Rd. Albany, GA 31721

Telephone: 229-881-4082

Organization you represent (if any): Georgia Pecan Grower Association

1. Please list any federal grants or contracts (including subgrants and subcontracts) you have received since October 1, 2004, as well as the source and the amount of each grant or contract. House Rules do NOT require disclosure of federal payments to individuals, such as Social Security or Medicare benefits, farm program payments, or assistance to agricultural producers:

Source: None Amount: _____

Source: _____ Amount: _____

2. If you are appearing on behalf of an organization, please list any federal grants or contracts (including subgrants and subcontracts) the organization has received since October 1, 2004, as well as the source and the amount of each grant or contract:

Source: None Amount: _____

Source: _____ Amount: _____

Please check here if this form is NOT applicable to you: X

Signature: _____

* Rule XI, clause 2(g)(4) of the U.S. House of Representatives provides: Each committee shall, to the greatest extent practicable, require witnesses who appear before it to submit in advance written statements of proposed testimony and to limit their initial presentations to the committee to brief summaries thereof. In the case of a witness appearing in a nongovernmental capacity, a written statement of proposed testimony shall include a curriculum vitae and a disclosure of the amount and source (by agency and program) of each Federal grant (or subgrant thereof) or contract (or subcontract thereof) received during the current fiscal year or either of the two previous fiscal years by the witness or by any entity represented by the witness.

PLEASE ATTACH DISCLOSURE FORM TO EACH COPY OF TESTIMONY.